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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,088	09/22/2003	Takanori Kamoto	1114-189	6085
23117	7590	09/23/2004	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			FAISON, VERONICA F	
			ART UNIT	PAPER NUMBER
			1755	

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/665,088	Applicant(s) KAMOTO ET AL.	
	Examiner Veronica F. Faison	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 22-25 and 50-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 26-49 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-21 and 26-49, drawn to ink composition, classified in class 106, subclass 31.27.
- II. Claims 22-25 and 50-53, drawn to print head, classified in class 347, subclass 24+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process can be used with a materially different product such as an ink composition which does not require that the surface tension limitation set forth in claim 1 .

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Warren Burnam on September 13, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-21 and 26-49. Affirmation of this election must be made by applicant in replying to this Office action. Claims 22-25 and 50-53 are withdrawn from further

Art Unit: 1755

consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-21, 26-49 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 and 27-48 of copending Application No. 10/713,226. Although the conflicting claims are not identical, they are not patentably distinct from each other because both ink composition disclose dynamic surface tension and static surface tension wherein the difference between the two surface tension overlap (i.e in 10/665,088 the difference is represented

Art Unit: 1755

by $0 \leq [\text{dynamic surface tension (mN/m)}] - [\text{static surface tension (mN/m)}] \leq 7 \text{ (mN/m)}$

and in 10/713,226 the difference is $0 \text{ mN/m} \leq dl \leq 15 \text{ mN/m}$ wherein dl is difference between dynamic surface tension and static surface tension).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Objections

Claims 17, 18, 21, 42, 43, 44, 45, 48 and 49 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claims should refer to other claims in the alternative only--, and/or, --cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 17, 18, 21, 42, 43, 44, 45, 48 and 49 not been further treated on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-10, 12-16, 19, 20, 26-30, 32-34, 36-41 and 46-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato (US Patent 6,440,203).

Kato teaches an ink composition comprising a first colorant, a second colorant, a penetrating agent, water and a water-soluble organic solvent . The first colorant is a pigment which is dispersible and/or dissolvable in water without any dispersant (abstract and col. 2 lines 32-45). The reference also teaches that any pigment can be used (col.

2 lines 64-65). Pigments such as carbon black, Pigment Yellow 74, 138, 150 and 180, Pigment Red 122 and 202, Pigment Blue 15:3 and 15:4 may be present in the ink composition in the amount of 0.1 to 10 percent by weight (col. 3 lines 31-56). The penetrating agent include glycol ether and/or acetylene glycol surfactants, wherein the glycol ether is present in the amount of 1 to 20 percent by weight and the acetylene glycol is present in the amount of 0.1 to 10 percent by weight (col. 7 line 51-col. 8 line 44). The ink composition has a surface tension of about 25 to 50 mN/m (col. 8 lines 45-47). The aqueous solvent comprises water and a water-soluble organic solvent (col. 8 lines 52-53). The ink may further comprise a wetting agent including ethylene glycol, diethylene glycol, and alkyl ether of polyhydric alcohols present in the amount of 1 to 40 percent by weight (col. 9 lines 4-25). The reference also teaches that an ink set comprising a black, cyan, magenta and yellow inks (col. 10 lines 51+). The composition as taught by Kato appears to anticipate the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10, 15, 16, 19, 20, 26-34, 39-41, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatake (US Patent 5,746,818).

Yatake teaches an ink composition comprising a pigment dispersible and/or soluble in water without the aid of any dispersant and a glycol ether selected from the group consisting of diethylene glycol mono-n-butyl ether, triethylene glycol mono-n-butyl ether, propylene glycol mono-n-butyl ether and dipropylene glycol mono-n-butyl ether (abstract and col. 2 lines 28-35). The reference also teaches a recording apparatus comprising a recording head is provided independently of an ink tank and an ink composition (col. 2 lines 48-50). The reference teaches that the glycol ether can effectively inhibit the bleeding or feathering, realizing a high-quality image (col. 2 lines 12-14). The pigment may be subjected to surface treatment to bond at least one function group selected from carbonyl, carboxyl, hydroxyl and sulfonyl groups or a salt thereof, wherein the pigment may be carbon black (col. 3 lines 22-32) and present in the amount of 2 to 15 percent by weight (col. 3 lines 60-61). The glycol ether may be present in the amount of 3 to 30 percent by weight (col. 4 lines 16-19). The reference further teaches components such as 1,5-pentane diol and surfactants are added to improve the solubility of the ink composition (col. 4 lines 20-35). The ink contains acetylene glycol surfactant including Surfynol 104, 82, 465, 485 and TG are present in

Art Unit: 1755

the ink composition in the amount of 0.5 to 1.5 percent by weight (col. 4 lines 28-37).

The reference remains silent to the ink properties set forth in claim 1. However it is the position of the Examiner that it would be obvious to one of ordinary skill in the art that the ink composition as taught by Yatake would have similar properties as claimed by Applicant absent evidence to the contrary.

Claims 1-10, 15, 16, 19, 20, 26-34, 39-41, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US Patent 6,500,248).

Hayashi teaches an ink composition comprising a pigment, a 1,2-alkanediol, glycerin, a polyhydric alcohol derivative and/or an acetylene glycol surfactant, a water-soluble organic solvent, and water. The reference further teaches that the ink composition has a surface tension of not more than 40 mNm⁻¹ at 20°C wherein the ink can provide good print quality and can realize continuous printing (abstract and col. 2 lines 47-60). The colorant may be a inorganic or organic pigment without particular limitations. The pigment may be subjected to surface treatment to attach at least one function group selected from carbonyl, carboxyl, hydroxyl and sulfonyl groups or a salt thereof (col. 4 lines 19-43). The pigment may be added to the ink composition in the amount of 0.5 to 15 percent by weight (col. 5 lines 7-9). The polyhydric alcohol may include diethylene glycol mono-n-butyl ether, triethylene glycol mono-n-butyl ether, propylene glycol mono-n-butyl ether and dipropylene glycol mono-n-butyl ether which may be used alone or in combination in the amount of 3 to 30 percent by weight (col. 5 lines 19-33). The acetylene glycol surfactant is added in the amount of about 0.1 to 3 percent by weight (col. 5 line 42-6 line 10). The ink composition comprises a water-

soluble organic solvent and water as the main solvent. The water-soluble organic solvent may be ethylene glycol, diethylene glycol, triethylene glycol, dipropylene glycol, and 1,5-pentanediol are present in the amount 1 to 30 percent by weight (col. 6 lines 25-45). The reference further teaches that an ink composition containing a pigment wherein the ink is delivered from the front face of the nozzle can stir the ink permitting the ink to be stably ejected. This can be achieved by pressurizing the ink, by means of pressurizing means for ejecting the ink (col. 10 line 66-col. 11 line 7). The reference remains silent to the ink properties set forth in claim 1. However it is the position of the Examiner that it would be obvious to one of ordinary skill in the art that the ink composition as taught by Yatake would have similar properties as claimed by Applicant absent evidence to the contrary.

Conclusion

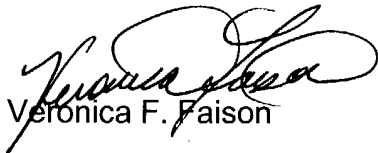
The remaining references listed on forms 892 and 1449 have been reviewed by the Examiner and are considered to be cumulative to or less material than the prior art references relied upon in the above rejections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Veronica F. Faison whose telephone number is 571-272-1366. The examiner can normally be reached on Monday-Thursday and alternate Fridays 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell can be reached on 571-272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1755

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Veronica F. Faison